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A Report to the Water Policy Committee on the Status of the Water Leasing Study and Pilot Program

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by the

Board of Natural Resources and Conservation

and the

Fish and Game Commission

November 9, 1990

I. INTRODUCTION

The purpose of this report, which is required by Section 85-2-436, MCA, is to document the status of the water leasing study and pilot instream flow program. It consists of four additional sections. Section II explains the pilot program and water leasing study as outlined by Sections 85-2-436 and 437, MCA. Section III then describes three proposed leases that are currently being studied. Section IV explains the status of the proposed leases, including all the steps that have been taken since the water leasing bill was signed by the Governor. Finally, Section V presents a discussion of issues that have emerged during the implementation of the study, along with several options for their resolution and recommendations.

II. DESCRIPTION OF THE PILOT PROGRAM AND WATER LEASING STUDY

Section 85-2-436, MCA, calls for a thorough study of water leasing for purposes of instream flow protection.[1] It also provides for a pilot program that authorizes the Montana Department of Fish, Wildlife and Parks (DFWP) to lease water rights for the purpose of maintaining or enhancing streamflows for the benefit of fisheries.[2]

The water leasing study and pilot program begins when the DFWP, with the consent of the Fish and Game Commission, submits a list of potential stream reaches for the study to the Board of Natural Resources and Conservation (BNRC).[3] The BNRC may declare a stream reach eligible for leasing only if it finds that water leasing is "necessary" to maintain or enhance streamflows for fisheries. The BNRC may designate no more than five stream reaches in the state where water leasing may occur.[5]

Once the BNRC designates the stream reaches on which leasing may occur, the DFWP then prepares and submits an application for a lease agreement to the Department of Natural Resources and Conservation (DNRC). The application for a lease authorization must include specific information on the length and location of the stream reach in which the streamflow must be maintained or enhanced.[6] The application must also provide a detailed streamflow measuring plan that describes the points where and the manner in which the streamflow will be measured.[7] The DFWP must pay all the costs associated with installing measuring devices and/or providing personnel to measure streamflows.[8]

Although not required by the law, the application will also include the name of the lessors and the amount and timing of water to be leased. The maximum quantity of water that may be leased is the amount historically diverted by the lessor.[9] However, only the amount historically consumed, or a smaller amount if specified by the DNRC in the lease authorization, may be used to maintain or enhance streamflows below the lessor's point of diversion.[10]

A proposed water lease must be processed through the same change of use procedures as any water transfer. Upon receipt of an application for a lease authorization, the DNRC must publish a notice of the application consistent with Section 85-2-307, MCA.[11] Parties who believe they may be adversely affected by the proposed lease may file an objection as provided in Section 85-2-308, MCA.[12] A lease may not be approved until all objections are resolved.[13] After resolving all the objections, the DNRC may authorize a lease of an existing right to maintain or enhance streamflows for the benefit of fisheries.[14] The priority date for a lease authorization is the same as the priority date of the water right leased.[15]

A lease may not be issued for a term of more than four years, but may be renewed for up to ten years per renewal.[16] The DFWP must notify the DNRC of its interest to renew a lease authorization.[17] Upon receiving notice of a lease renewal, the DNRC must notify other appropriators potentially affected by the lease and allow 30 days for submission of new evidence of adverse effects.[18] A lease authorization is not required for a renewal unless an appropriator other than an appropriator having a priority that is junior to the lease authorization submits evidence of adverse effects to his rights that has not been considered previously.[19] If new evidence is submitted, a new lease authorization must be obtained according to the requirements outlined above.[20] Neither a change in an appropriation right nor any other authorization is required for the reversion of the leased water right to the lessor's previous use.[21]

During the term of the original lease, the DNRC may modify or revoke the lease authorization if an appropriator, other than an appropriator having a priority that is junior to the lease authorization, proves by substantial credible evidence that his water right is adversely affected.[22] A person issued a water use permit with a priority date after the date of filing an application for a lease authorization may not object to the exercise of the lease, the renewal of the lease, or the reversion of the water right to the lessor.[23]

In addition to the pilot leasing program, the DFWP and the DNRC, in consultation with the legislative Water Policy Committee, must prepare a study report on the pilot program.[24] The study report must be adopted by the BNRC and the Fish and Game Commission and then submitted to the Water Policy Committee, which shall complete a final report by December 1, 1990.[25]

The study report must, at a minimum, provide the following data for each designated stream reach and each pilot lease entered into: (1) the length of the stream reach and how it was determined;[26] (2) the technical methods and data used to determine critical streamflow or volume needed to preserve fisheries;[27] (3) the legal standards and technical data used to determine and substantiate the amount of water available for instream flows through leasing of existing rights;[28] (4) the contractual parameters, conditions, and other steps taken to ensure that each lease in no way harms other appropriators, particularly if the stream is one that experiences natural dewatering;[29] (5) the methods and technical means used to monitor use of water under each lease;[30] and (6) based on the data provided by items 1-5, develop a complete model of a water lease and lease authorization that includes a step-by-step explanation of the process from initiation to completion.[31] The DFWP may expend up to $60,000 of federal special revenue to undertake the water leasing study.[32]

Although the DFWP is the only entity allowed to lease water for instream flow purposes, it may accept contributions from public or private entities for such purposes.[33] The Nature Conservancy has signed an agreement with the DFWP to help raise money for the Montana Water Leasing Trust Fund.[34] The fund will serve as a repository for contributions from private individuals, foundations, and corporations who wish to help implement the water leasing study by providing funds to lease water rights for instream flow purposes.

III. DESCRIPTION OF THE PROPOSED LEASES

The Department of Fish, Wildlife and Parks is currently studying the feasibility of leasing water rights for instream flow purposes on three stream reaches: (1) Swamp Creek, a tributary to the Big Hole River; (2) Big Creek, a tributary to the Yellowstone River; and (3) Mill Creek, a tributary to the Yellowstone River. This section of the report describes these proposed leases and the fishery values they would protect.

1. Swamp Creek

A. Name and Location of Stream Reach

Swamp Creek is a 20-mile-long tributary that enters the upper Big Hole River at river mile 109, 3 1/2 miles north of Wisdom. The stream reach that is being studied for leasing extends 2 1/2 miles upstream from the mouth of the creek (NW, Sec. 9, T2S, R14W) to the first and lower-most active irrigation diversion (NW, NE, SW, Sec. 20, T2S, R15W). See Appendices 1 and 2.

B. Length of Stream Reach and How it Was Determined

The length of the stream reach is about 2 1/2 miles. It was determined by the location of the existing point of diversion and from the reach of Swamp Creek utilized by spawning grayling.

C. The Water Right Being Investigated for Leasing

One water right is currently being investigated for possible leasing on Swamp Creek. The water right is owned by the Harrington Company of Butte. It is the senior decreed right on the creek and is diverted at the creek's lower-most active diversion, located about 2 1/2 miles upstream from the mouth. The diverted water is currently used to irrigate about 800 acres of wild hay and pasture. Relevant information about this right, according to the claim submitted to the water court in 1982, includes:

Claim No:	41D-W-194957
Priority Date:	October 1, 1885
Decreed:	1909
Flow Rate:	135 Miners Inches (3.38 cfs)
Volume Claimed:	1,417.5 acre-feet per year
Acres Irrigated:	800
Period of Use:	April 1 through October 30
Point of Diversion:	NW, NE, SW, Sec. 20, T2S, R15W

D. The Fishery Values

Swamp Creek supports resident populations of brook trout, mountain whitefish, and burbot. However, the reason that water leasing is being considered in Swamp Creek is because it provides essential spawning and rearing habitat for the Arctic grayling (Thymallus arcticus Montanas (Milner)).

The Arctic grayling is a "Species of Special Concern" in Montana, denoting a severe limitation in numbers of organisms and/or their preferred habitats.[35] The last substantial stream-dwelling grayling population in the contiguous 48 states now exists only in portions of the Big Hole River drainage.[36] This population is precariously low and appears to be declining.[37] Grayling strongholds on the mainstem Big Hole presently support less than 30 adults per river mile.

The decline of the Big Hole grayling has been attributed to a number of factors, including habitat loss, dewatering, instream sedimentation, water quality deterioration, lack of genetic diversity, exploitation by anglers, and competition with the non-native rainbow, brown and brook trout, which were introduced into the Big Hole system.[38]

Only three Big Hole tributaries, including Swamp Creek, support significant spawning runs of Arctic grayling.[39] Dewatering of the spawning and rearing areas in these few tributaries is one factor contributing to the grayling's decline. Steps have already been taken to reduce exploitation by instituting "catch-and-release only" fishing regulations for arctic grayling in the entire Big Hole drainage. Problems relating to competition with exotic species and the lack of genetic diversity are difficult, if not impossible, to resolve in the near-term. Therefore, enhancement of instream flows in crucial spawning tributaries is an immediate action which could help to improve habitat conditions, stabilize the present grayling population and aid grayling recovery.

Grayling begin entering Swamp Creek from the Big Hole in mid-April. Spawning occurs between mid-April and mid-May and, by the end of May, most of the eggs have hatched. The young fry grow very fast and remain in Swamp Creek through the summer. In 1988 and 1989, 10 and 15 adult grayling, respectively, entered lower Swamp Creek to spawn. This is approximately 10-15 percent of the total adult spawning population in the upper Big Hole and its tributaries.

Grayling appear to utilize only the lower 1 1/2 miles of Swamp Creek for spawning and the rearing of young. This stretch is below the lower-most active irrigation diversion on the creek and is a part of the approximate 2 1/2-mile-long reach being investigated for water leasing.

E. Volume of Water Needed and How it Was Determined, Including Technical Methods and Data

Irrigation withdrawals from Swamp Creek have an impact on grayling during the period when adults are spawning, eggs are hatching, and fry are rearing in the lower creek (mid-April through September).[40] Recent work by DFWP suggests that grayling spawning and rearing habitats would be enhanced if additional flow was available during these life stages.

In its water reservation application for the Upper Missouri River Basin, DFWP requested 8 cubic feet per second (cfs) in the lower portion of this reach of Swamp Creek throughout the year to protect fishery habitat. This recommendation was derived using the Wetted Perimeter Inflection Point Method,[41] the instream flow method selected by DFWP to quantify the instream flows for which reservation water rights are requested.

The recommended 8 cfs completely wets the stream channel habitats grayling use for spawning. Spring flows are often higher than this, but because of diversions for irrigation in early May, flows rapidly drop off (particularly in low flow years), removing water from some portions of the stream channel where grayling are spawning. This flow reduction prevents deposited eggs from hatching and reduces the recruitment of young grayling to the population. In addition, young grayling fry need protection from predators during their early life stages. This protection is af-

forded by adequate flows that provide protective cover along stream margins.

Suitable summer flows are also required to maintain food production, reduce predation and competition between species (i.e., maintain adequate hiding and living space), maintain suitable water temperatures, and allow young grayling to move into the Big Hole River for the winter. Late season irrigation withdrawals often produce fluctuations in stream flow which impact these life requirements.

During 1988, flows measured by Skaar[42] in the last half of August and first week in September on the lower 1 1/2 miles of Swamp Creek ranged from 1.1 cfs to 3.9 cfs (see Appendix 3). These measured values are well below the 8 cfs recommendation generated by the Wetted Perimeter Inflection Point Method. Other flow measurements substantiate the periodic occurrence of flows less than 8 cfs.

Supplemental flow provided by a water lease could improve the periodic low flows that occur in this stream reach of Swamp Creek. These improved flows will enhance grayling spawning, hatching, rearing and out-migration.

F. Availability of Water and How it Was Determined, Including Legal Standards and Technical Data

A flow of at least 8 cfs is required to support grayling spawning and rearing in Swamp Creek from mid-April to late September. A portion of the 8 cfs already occurs in the reach, but varies in timing and quantity during each month.

The decreed right being investigated for leasing has a flow rate of 3.38 cfs and a claimed volume of 1,471.5 acre-feet per year, and is the senior right on the creek. The entire right could be leased during the current period of use (that is, April-October as specified in the claim), but only the consumed amount (yet to be determined) could be protected in the reach.

However, it has yet to be determined whether the right has been continuously used during the April-October period or whether a junior user has traditionally called for the water during periods of non-use. This and other pertinent information for the right will be gathered during the fall of 1990.

G. Contractual Parameters, Conditions, and Other Steps Taken to Protect Other Appropriators

In the fall of 1990, DFWP awarded a contract to a private consulting firm to determine the hydrologic impacts that the proposed water lease could have on the interests of other water users along Swamp Creek and the Big Hole River. The study showed that this water lease is expected to have no adverse hydrologic impacts on other water users. However, since the leasing application must be approved through the change of use process, it is premature to propose contractual parameters that would protect the interests of water users who believe they may be affected by the lease. This statutory requirement will be fully addressed in the final report.

H. Methods for Monitoring Leased Water

A detailed streamflow measuring plan must accompany the application for a water lease. The DFWP is currently negotiating with the water right holder on leasing options. A flow measuring plan is part of these negotiations and the plan will be submitted with the application for a water lease. Again, this statutory requirement for monitoring leased water will be addressed in the final report.

2. Big Creek

A. Name and Location of Stream Reach

Big Creek is a tributary to the upper Yellowstone River entering at river mile 533, approximately seven miles southwest of Emigrant. The stream reach that is currently being studied for water leasing extends upstream about one mile from the mouth of the creek (NW, SE, Sec. 23, T6S, R7E) to a series of six irrigation diversions in NW, NE, Sec. 22, T6S, R7E. See maps in Appendices 4 and 5.

B. Length of Stream Reach and How it Was Determined

The length of the stream reach is about one mile. It was determined by the location of the six irrigation diversions which currently dewater the lower reach of Big Creek and from the reach of stream currently utilized by spawning cutthroat trout.

C. The Water Right Being Investigated for Leasing

A series of closely-spaced irrigation diversions beginning at about stream mile one have for many years diverted all of the flow of Big Creek, causing the lower mile of stream to go dry during the months of August and September.[43] These ditches serve nine water users who irrigate about 1,200 acres of alfalfa, wild hay and sometimes small grains on a rotation basis with alfalfa.

Water losses in the Company or Mutual ditch, one of the largest of the six irrigation ditches, are severe due to the alluvial nature of the soils.[44] The other ditches may have similar losses.

The water users are in the preliminary stage of investigating the potential to replace the inefficient ditch systems with two pipelines - one running north from the creek and one south. Based on rough calculations by the SCS,[45] the pipeline would require approximately 20 cfs of water to satisfy the irrigation needs of all current users, leaving, during most years, excess flow of about 10-15 cfs in August and September when the lower creek currently goes dry.

The Big Creek water users (an unchartered group of ranchers who operate under a 1909 decree) are considering leasing all or a portion of the "salvaged" water to DFWP for instream uses. Money raised from the lease would help finance the pipeline project.

D. The Fishery Values

A pure-strain of Yellowstone cutthroat trout (*Salmo clarki bouvieri*) inhabits the upper Yellowstone River. Several small tributaries to the Yellowstone River upstream from Springdale, including Big Creek, are the only documented spawning sites for the river population of Yellowstone cutthroat trout.[46] The Yellowstone cutthroat is classified as a "Species of Special Concern" in Montana.[47] The classification denotes a severe limitation in numbers of organisms and/or their preferred habitats.[48]

The Yellowstone cutthroat was originally the only trout living in the Yellowstone River basin and resided in all the river's tributaries as far east as the Tongue River.[49] It has been displaced from much of its former range by competition with introduced fishes and many of the remaining populations have been genetically contaminated through hybridization with rainbow and golden trout, and other cutthroat strains.[50] Other reasons for the decline are man-caused habitat changes, including stream bank destruction, dewatering of spawning tributaries, in-channel sedimentation, and degraded water quality.[51] Pure-strain Yellowstone cutthroat trout currently occupy only eight (8) percent of their original range.[52]

Berg (1978) and Clancy (1985) showed that portions of this population will migrate long distances in the Yellowstone River to spawn in its tributary streams. Dewatering of the lower reaches of some of these tributaries during the irrigation season adversely impacts the reproductive success of cutthroat trout and, consequently, limits the production of new recruits for the river fishery.[53] Studies by the Montana Department of Fish, Wildlife and Parks show tributary dewatering to be an important, if not the major, factor regulating the numbers of adult Yellowstone cutthroat that reside in the Yellowstone River.[54]

Yellowstone cutthroat begin entering the spawning tributaries in mid-June, with the peak of spawning occurring in early to mid-July[55]. Eggs incubate in the spawning gravels for about 30 days before emerging as fry. By the end of September, most fry have migrated out of the tributaries into the main river. However, severe dewatering in some tributaries prevents the completion of this process or limits the reproductive potential of the tributary streams. Big Creek is one of those streams.

The run of cutthroat trout into Big Creek is weak, with 20-30 spawners entering per year. A few fish are able to negotiate all six irrigation diversion dams, gaining access to the non-dewatered segment above. In 1988 and 1989, 27 and 39 spawning redds, respectively, were counted in the lower one mile of creek below the Company (Mutual) Ditch, the largest of the six ditches.[56] However, because this lower mile typically goes dry when cutthroat eggs should be incubating in the gravels and when the fry should be emerging and migrating to the main river, the reproductive contribution from Big Creek to the Yellowstone River is poor.[57]

Cutthroat trout recruitment is expected to significantly increase if flow is maintained year-round in the lower one mile of Big Creek below the diversions.

E. Volume of Water Needed and How it Was Determined, Including Technical Methods and Data

Adequate flow must be provided in Big Creek throughout the spawning, egg incubation, hatching, emergence and rearing periods (approximately June 15 - September 30) to enhance cutthroat recruitment to the mainstem Yellowstone. Spawning redd (i.e. gravel nests where eggs are deposited) development and streamflows covering the redds were measured on Big Creek in 1989.[58] The study indicated that a flow of 11 cfs or more would have to remain in this reach of stream throughout the irrigation season to cover the spawning redds and allow hatching and emergence of fry to occur. At 11 cfs, only 2.5% of the redds were dewatered (no longer covered by water); at 5 cfs, 36% were dewatered and at 0.5 cfs, 92% were dewatered in 1989.[59]

F. Availability of Water and How it Was Determined, Including Legal Standards and Technical Data

Flow records from the USGS gauge on Big Creek, located above the irrigation diversions, show the median monthly flows for August and September to be 35 and 33 cfs, respectively[60]. Preliminary, rough calculations by the SCS suggest that the two proposed pipelines would divert about 20 cfs, leaving 13 cfs or more of salvaged water available for leasing in August and September, months when the lower stream currently goes dry. Sufficient salvaged water should be available in most years to maintain a streamflow of at least 11 cfs.

At this time, an accurate determination of the amount of salvaged water that might become available for leasing in dry, normal and above normal water years is unavailable and will be a major focus of future on-site leasing studies.

G. Contractual Parameters, Conditions and Other Steps Taken to Protect Other Appropriators

An application for a water lease on Big Creek will not be submitted to the DNRC until engineering plans and financing for the pipeline system become more firm. At that time a hydrologic study will be conducted to determine the impacts, both adverse and beneficial, that the proposed water lease could have on the interests of other water users on Big Creek and the Yellowstone River. Until these impacts are defined and the affected users identified, it is premature to propose contractual parameters that would protect the interests of these other users. This statutory requirement will be fully addressed in a later report.

H. Methods for Monitoring Leased Water

A detailed streamflow measuring plan must accompany an application for a water lease. As mentioned above, this application will not be submitted until plans for the pipeline are more complete and a hydrologic study is conducted to define the potential impacts to other water users if a lease were to be implemented. This statutory requirement for monitoring leased water will be addressed in the final report.

3. Mill Creek

A. Name and Location of Stream Reach

Mill Creek, a 22-mile-long tributary to the upper Yellowstone River, is located in Park County about 20 miles south of Livingston, Montana, and 30 miles north of Yellowstone National Park (see Appendix 6). It arises in the Gallatin National Forest in the high peaks of the Absaroka Range, and flows through a steep canyon and broad high bench along the east side of the Paradise Valley before discharging into the Yellowstone River. Mill Creek drains an area of about 150 square miles. Annual stream flow averages about 160 cfs.[61]

B. Length of Stream Reach and How it Was Determined

The length of stream reach in which leasing would likely occur is about 6.4 miles long and extends upstream from the mouth of Mill Creek (NE, SE, Sec. 7, T5S, R9E) to the diversion point of the new Mill Creek Water and Sewer District pipeline in SE, NW, SW, Sec. 2, T6S, R9E (Appendix 6). It was determined by the location of the water rights being investigated and from the reach of stream currently utilized by spawning cutthroat trout.

During August, a critical month for fish and irrigation, diversions on Mill Creek remove, on the average, over 90% of the mean August flow, leaving little or no water at the mouth.[62] In about six out of ten years, there is zero flow for a seven-day period in the lower reach of Mill Creek.[63]

C. The Water Right Being Investigated for Leasing

The Mill Creek Water and Sewer District, composed of Mill Creek water users on three major ditch systems located about 5-6 miles above the creek mouth, have obtained $2.5 million in state and federal grants and low interest loans to improve delivery and on-farm irrigation efficiencies. This new system, which will cost over $2.9 million, will replace three parallel canals.[64] Planned developments include one new diversion structure, 4.2 miles of canal, 11.6 miles of pressurized delivery pipelines, and new sprinkler systems on 2,160 acres of land presently flood irrigated.[65] The last phase of the project is slated for completion in September, 1991.

When the project is completed, approximately 15,800 acre-feet less water will be diverted from Mill Creek annually.[66] Average August and September flows downstream from the project diversion should increase by about 2,400 acre-feet.[67] The frequency of having zero flow at the mouth of Mill Creek, for a 7-day period, will be reduced from about 60% to about 20%.[68]

This added flow was projected, in project documents, to substantially benefit the fishery resource by maintaining satisfactory cutthroat spawning flows in the lower six miles of Mill Creek in eight out of ten years.[69] Numbers of catchable-size cutthroat trout in an 18-mile reach of the Yellowstone River could potentially increase by about 2,200 fish annually.[70] This increase is projected to provide for an additional 1,830 fisherman-days of recreation, which will generate an estimated $24,400 in annual benefits.[71]

D. The Fishery Values

A pure strain of Yellowstone cutthroat trout (*Salmo clarki bouvieri*) inhabits the upper Yellowstone River.[72] The Yellowstone cutthroat is a fish classified by the American Fisheries Society as a "Species of Special Concern" in Montana. The classification denotes a severe limitation in numbers of organisms and/or their preferred habitats.[73] It was originally the only trout living in the Yellowstone River basin and resided in all the river's tributaries as far east as the Tongue River.[74] It has been displaced from much of its former range by competition from introduced fishes and many of the remaining populations have been genetically contaminated through hybridization with rainbow and golden trout, and other cutthroat strains.[75] Other reasons for the decline are man caused habitat changes, including stream bank destruction, dewatering of spawning tributaries, in-channel sedimentation, and degraded water quality.[76] Pure-strain Yellowstone cutthroat currently occupy only eight percent (8%) of their original range.[77]

Several small tributaries to the Yellowstone River upstream from Springdale are the only documented spawning sites for the river population of Yellowstone cutthroat trout.[78] Yellowstone cutthroat trout display a strong homing instinct during spawning, returning to the stream in which they were hatched (SCS 1985). Berg[80] and Clancy[81] showed that portions of this population will migrate long distances in the Yellowstone River to spawn in its tributary streams. Dewatering of the lower reaches of some of these tributaries during the irrigation season adversely impacts the reproductive success of cutthroat trout and, consequently, limits the production of new recruits for the river fishery.[82] Studies by the Montana Department of Fish, Wildlife and Parks (DFWP) have shown tributary dewatering to be an important, if not the major, factor regulating the numbers of adult Yellowstone cutthroat that reside in the Yellowstone River.[83]

Yellowstone cutthroat begin entering the spawning tributaries in mid-June, with the peak of spawning occurring in early to mid-July.[84] Eggs incubate in the spawning gravels for about 30 days before emerging as fry. By the end of September, most fry have migrated out of the tributaries into the main river. However, severe dewatering in some tributaries prevents the completion of this process or limits the reproductive potential for the tributary streams.[85] Mill Creek is one of those streams.

Small numbers of cutthroat trout spawners enter Mill Creek in some years.[86] During June and July 1983, only four migratory cutthroat were electrofished on four occasions in a ½ mile-section of lower Mill Creek.[87] Under the existing level of dewatering, few cutthroat are able to ascend Mill Creek to spawn.[88] For the few that succeed in laying eggs, reproductive success is poor because the lower creek is commonly dry when the eggs should be incubating in the gravel, and when fry should be emerging and migrating to the main river.[89]

E. Volume of Water Needed and How it Was Determined

A quantification of the flow that is needed in Mill Creek to maintain spawning/incubation habitat for cutthroat trout is unavailable. One means for deriving the needed flow is to determine, by direct observation, the percent of the cutthroat spawning redds that are covered by water as the flow is depleted over the summer irrigation season. However, the current low use by cutthroat spawners prevents such observations for Mill Creek. Another approach was, therefore, used for deriving a rough measure of the needed flow.

As a general guideline for mountain streams, fishery maintenance flows should not be less than a stream's base flow, which is defined as the lowest mean monthly flow in winter.[90] Base flow for Mill Creek is about 27 cfs. While this flow level provides a goal to strive for, it is probably unachievable in lower Mill Creek where total dewatering is common. Fisheries work on Big Creek, a neighboring cutthroat spawning tributary that is morphologically similar to Mill Creek, showed that a flow of 11 cfs was sufficient to cover almost all of the spawning redds and allow hatching and emergence of fry to occur.[91]

Base flow for Big Creek is 23 cfs,[92] which is about double the needed spawning flow. Likewise, the needed spawning flow for Mill Creek could be much less than the creek's base flow of 27 cfs. For this exercise, it is, therefore, assumed that one-half the base flow (13 cfs) will suffice as a spawning flow for Mill Creek. This estimate provides a rough measure of the flow that must be maintained through water leasing to provide adequate spawning benefits. An instream flow in the realm of 13 cfs does not appear an unrealistic goal when considering that the SCS[93] estimated that average August and September flows downstream from the project diversion should increase by about 2,400 acre-feet (19.8 cfs) when the project is completed.

F. Availability of Water and How it Was Determined, Including Legal Standards and Technical Data

The DFWP will investigate the opportunity to lease all, or a portion of, the salvaged water created when the pipeline project is completed in about September, 1991. An accurate determination of the amount of salvaged water that might become available for leasing is currently unavailable and will be a major focus of the leasing study. Calculations by the SCS[94] show that up to about 15,800 acre-feet of water could be available in most years.

The potential for leasing a portion of the rights associated with the three non-project diversions that are located downstream from the new pipeline diversion will also be investigated.

G. Contractual Parameters, Conditions, and Others Steps Taken to Protect Other Appropriations

During the next two years, DFWP will investigate the feasibility of leasing water on Mill Creek and identify potential lessors. More than one lease will probably be required to provide sufficient instream flows in Mill Creek. Once potential lessors are identified, the DFWP will determine the impacts, both adverse and beneficial, that the proposed water leases could have on the interests of other water users on Mill Creek and the Yellowstone River. These impacts, if any, have yet to be determined. Until these impacts are defined and the affected users identified, it is premature to propose contractual parameters that would protect the interests of these other users. This statutory requirement will be fully addressed in a later report following completion of the study.

H. Methods for Monitoring Leased Water

Information will be gathered on Mill Creek duringthe next two years to determine whether or not water leasing is feasible and to define the potential impacts to other water users if a lease were to be implemented. This statutory requirement for monitoring leased water will be addressed in the final report.

IV. STATUS OF THE PROPOSED LEASES

This section of the interim report documents the status of the proposed leases and leasing study as of October 11, 1990. It includes all the actions that have been taken to date to acquire a water lease. It is designed to satisfy the requirements of Section 85-2-436(1)(b), MCA, requiring development of "a complete model of a water lease and lease authorization that includes a step-by-step explanation of the process from initiation to completion." A water lease was not

completed during the study period covered by this report.

Following the Governor's signing of HB 707 on May 11, 1989, DFWP personnel assembled a tentative list of streams upon which to investigate water leasing. They also developed a set of criteria to be used in determining the types of streams which would be investigated for leasing. On July 10, 1989, the Fish and Game Commission (Commission) approved the stream leasing criteria. The Board of Natural Resources and Conservation (Board) approved the criteria on July 17, 1989. The Board also discussed some additional criteria to utilize in its process of approving streams for water leasing. On Sept. 12, 1989, the Board approved its own criteria for approving streams for leasing. The DFWP stream leasing criteria are presented in Appendix 7, while the Board criteria are in Appendix 8.

During the remaining months of 1989, DFWP contacted persons located on several of the streams where water leasing would be desirable. Some water users were receptive to investigating the possibility of leasing water, while others were not interested. On some streams, it was determined that the complexity of water use precluded pursuing leasing with water users.

By the end of 1989, two streams had become candidates for water leasing: Swamp Creek, a tributary to the Big Hole River near Wisdom, and Big Creek, a tributary to the Yellowstone River near Emigrant.

On January 18, 1990, DFWP met with Swamp Creek water users in Wisdom to explain the water leasing program and to obtain comments on a possible water lease with Fred and Jack Hirschy, two water users on Swamp Creek. On February 7, 1990, DFWP had a similar meeting with Big Creek water users in Emigrant to discuss the feasibility of leasing water on that stream. At both of those meetings, there was general acceptance of the water leasing study process and there were no comments opposing such a study on either stream.

Following the meetings with the water users, DFWP proceeded to assemble a report describing the potential water leases on Swamp Creek and Big Creek for presentation to the Commission and the Board. The report was used as the basis for the Commission and Board to approve the two streams for further study. Department of Natural Resources and Conservation (DNRC) personnel contributed substantially in the development of this document.

On February 23, 1990, the water leasing report was presented to the Fish and Game Commission, which gave its approval for pursuing water leasing on both streams. On March 5, 1990, the Board held a public hearing on the proposed water leases and, following public comments, approved both streams for continued study by DFWP (see Appendix 9).

Throughout the process, water leasing status reports were presented by DFWP to the Legislative Water Policy Committee at each of its meetings. Presentations were also made to the State Water Plan Advisory Council, the Montana Chapter of the American Water Resources Association, the annual meeting of the Montana Association of Conservation Districts, the Deer Lodge Conservation District's Annual Livestock Seminar in Deer Lodge, and to the Montana Water Resources Association. Discussions were also held with the Headwaters RC&D Water Committee in Butte.

Following approval by the Board for further study of the two stream reaches, an outline of this water leasing study report was prepared by DFWP, DNRC and EQC. The report outline was approved by the Commission on May 11, 1990 and by the Board on June 7, 1990, following some suggestions for additions to the report, and by the Water Policy Committee on June 8, 1990, after making some suggestions on the content of the report.

As part of the water leasing study, the DFWP decided that two studies should be conducted to: (1) determine the market value of agricultural water; and (2) evaluate the hydrologic effects of leasing water on other water users, particularly the potential changes in return flows. On May 7, 1990, DFWP sent out requests for proposals (RFP) to a mailing list of 18 consultants to determine the market value of agricultural water. The deadline for responding to the proposal was May 31, 1990.

On May 10, 1990, a second RFP was sent out to a mailing list of 26 consultants to evaluate the hydrologic impacts of water leasing. June 4, 1990 was established as the deadline for submitting proposals to this RFP. By May 31 and June 4, only three proposals were

received for each RFP sent out for response. The responders are as follows:

Market Values Leasing Impacts

Bioeconomics, Assoc. Missoula, Montana	Chen-Northern Helena, Montana
Hydrosphere Boulder, Colorado	HKM Associates Billings, Montana
CH2M Hill Boise, Idaho	Hydrosphere Boulder, Colorado

All six proposals were evaluated by two committees composed of personnel from DFWP, DNRC and the USGS.

The budgets submitted for the market value study were $19,000, $36,350, and $42,712. The budgets submitted for the leasing impacts study were $44,843, $45,037 and $50,000. HB 707 authorized DFWP to spend $60,000 of federal aid money to conduct water leasing studies. DFWP could match this with $20,000 of state license funds for a total budget of $80,000. Following the evaluation of the proposals submitted, the budgets for the top-ranked responders exceeded $86,000. Since this amount exceeded the total amount available, and since only two streams were currently being studied for leasing, it was decided that a budget of $60,000-65,000 would be a more appropriate target.

Since the budgets exceeded the funds available, the top-ranked responder to the market value RFP was asked to submit a revised proposal and budget as its "best and final offer." This was done and a $25,000 contract was awarded to Bioeconomics Associates. The three proposals submitted by the responders to the impact analysis RFP were very close in their rankings and, since they also contributed to exceeding the funds available, all three respondents were asked, similarly, to modify their proposals and submit a budget in the area of $40,000. By July 9, 1990, the revised proposals and budgets were submitted by all three respondents.

Following review of the revised proposals and budgets by the evaluation committee, and due to the timing of the required events leading to selection and approval of streams for study and the advertising for and processing of proposals for the hydrologic analysis, it became too late for suitable site-specific studies to be conducted on Swamp and Big creeks in 1990. Too much of the 1990 irrigation season had passed by the time a contractor could be selected to conduct those site-specific studies. Additionally, by cutting back the budget, the comprehensiveness of the site-specific studies was reduced and it was felt sufficient data to determine effects on water users would not be obtained for the money expended. Therefore, those tasks were deleted from the proposals of all three respondents at the request of DFWP and reduced budgets were submitted for the remaining tasks. Those proposals were again evaluated and a contractor selected. The selected contractor is HKM Associates. The contractor's budget is $12,358.

The water leasing study has been proceeding at a rate slower than anticipated for two principal reasons. First, the DFWP elected to proceed at a cautious, yet deliberate pace given the controversy and concern surrounding the passage of HB 707. Second, the DFWP proceeded to conduct several studies on the impact of water leasing in advance of applying for a change of use.

On August 30 and 31, 1990, the Board of Natural Resources and Conservation reviewed a draft report of the water leasing study, including a letter by the DFWP (see Appendix 10). The Board's comments on the draft report are summarized in a letter attached as Appendix 11. The Fish and Game Commission then reviewed the same draft report on September 14, and rather than make any comments on the draft report or respond to the comments of the Board, it convened a meeting on October 11 with representatives from the Board, Commission, and Water Policy Committee.

In response to the comments by the Board (see Appendix 11), the DFWP is proceeding to submit an application for a water lease on Swamp Creek to the Department of Natural Resources and Conservation. In addition, the Department of Fish, Wildlife and Parks received approval on November 9, 1990 from the Board and the Commission to study the feasibility of leasing water for instream flows on Mill Creek.

V. ISSUES, OPTIONS, AND RECOMMENDATIONS

Given the status of the water leasing study, the Board of Natural Resources and the Fish and Game Commission would like to raise several issues that have emerged, and present some options and recommendations for responding to the issues.

1. How Much Water May be Maintained for Instream Flow?

Two of the three water leases currently being studied involve the potential leasing of water that may be salvaged by irrigators becoming more efficient. According to the water leasing statute, however, only the amount of water historically consumed may be maintained and protected below the lessor's point of diversion. The definition of "historically consumed" is not defined in the statute. Therefore, it will be determined through the change of use process on a site-specific basis. Neither the Board nor the Commission make a recommendation on this issue.

2. Length of the Leases

During negotiations with a potential lessor, the water right holder indicated that he may be interested in leasing his water for instream flow purposes, but would like to sign at least a five-year contract. While the DFWP could enter into such a contract, it would expire if the legislation allowing water leasing sunsets in 1993. This limitation may be a stumbling block during additional negotiations with potential lessors during the remaining two years of the leasing study. At least two options, both requiring legislative action, are available to address this issue.

Options

A. Change the law to allow any leases approved during the four year study period to continue past June 30, 1993.

B. Extend the time period for the water leasing study.

C. No action.

Recommendations

Both the Board of Natural Resources and Conservation and Fish and Game Commission recommend Option A.

3. Study of Impacts From Water Leases

The DFWP must conduct some studies on the potential adverse impacts to other water users from water leasing prior to entering the change of use process. However, the Board of Natural Resources and Conservation raised the issue that the DFWP should also study the impacts to water users from water leases after the leases have been exercised. Several options are available to address this issue.

Options

A. The DFWP should provide the Board with available information on the adverse hydrologic impacts, if any, to other water users after the leases have been exercised.

B. The DFWP, in cooperation with the DNRC, should hold public meetings in appropriate communities after any leases have been exercised. The public meetings should provide an opportunity for water right holders and others to comment on the social, economic, environmental, and hydrologic impacts of the exercised leases.

C. No action.

Recommendation

Both the Board of Natural Resources and Conservation and the Fish and Game Commission recommend Options A and B.

4. Prepare Another Report for the 1993 Legislature

Given that the water leasing study is planned to continue for at least two more years, both the Board and the Commission raised the issue of preparing another report for the 1993 legislature. At least two options are available to address this issue.

Options

A. Do not prepare another report on the water leasing study.

B. Require the Board of Natural Resources and Conservation and the Fish and Game Commission to prepare another report on the water leasing study. The Board and Commission should then submit the report to the Water Policy Committee, which should then present a final report to the 1993 legislature.

Recommendations

Both the Board of Natural Resources and Conservation and the Fish and Game Commission recommend Option B.

REFERENCES

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13 Mont. Code Ann., Section 85-2-436(2)(b).

14 Mont. Code Ann., Section 85-2-436(2)(b).

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16 Mont. Code Ann., Section 85-2-436(2)(e).

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26 Mont. Code Ann., Section 85-2-436(1)(a)(i).

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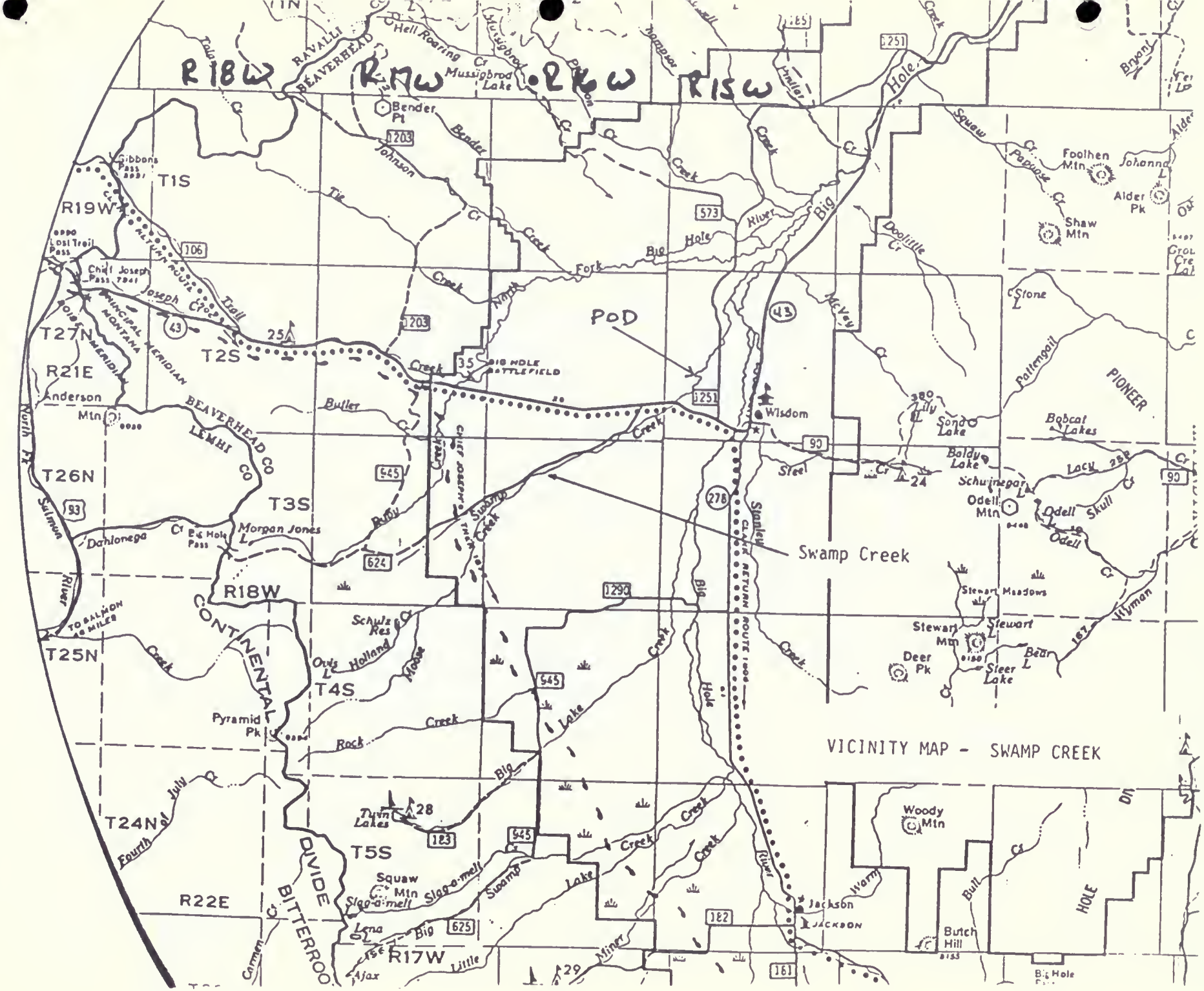
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R16W
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T1S
T27N
T2S
T26N
T3S
T25N
T4S
T24N
T5S
R19W
R21E
R22E
R17W
POD
Swamp Creek
VICINITY MAP - SWAMP CREEK
Wisdom
Jackson
Big Hole Battlefield
Continental Divide
Bitterroot
Beaverhead Co
Lemhi Co
Pioneer
Big Hole
Anderson Mtn
Pyramid Pk
Squaw Mtn
Odell Mtn
Stewart Mtn
Deer Pk
Woody Mtn
Butch Hill
Foolhen Mtn
Alder Pk
Shaw Mtn
Bender Pt
Gibbons Pass
Lost Trail Pass
Chief Joseph Pass
Big Hole Pass
Lily Lake
Sondo Lake
Baldy Lake
Schwinegar L
Stewart Meadows
Steer Lake
Bear L
Lena
Ajax
Dyer Lakes
Ovis L
Holland L
Morgan Jones L
Johanna L
Stone L
Bobcat Lakes
Odell Skull
Alternate Route
Clark Return Route
Nez Perce Trail
Joseph Creek Trail
Principal Montana Meridian
Boise Meridian
Salmon River
North Fk
Big Hole River
Rock Creek
Warm Creek
Bull Creek
Miner Creek
Carmen Creek
Fourth July Cr
Dahlonega Cr
Hell Roaring Cr
Mussigbrod Lake
Ravalli
Beaverhead
Bender
Johnson
Tie
Big Hole River
Big Hole Fork
North Fork
Doolittle Cr
McVey Cr
Squaw Cr
Papoose Cr
Bryant
Hailey
Hole
Buller
Steel Cr
Swamp Creek
Stanley
Lacy
Odell
Vilyman
Schultz Res
Moose
Swamp Lake
Little
Big
Divn
Lake
Creek
Cr
River
Fork
Trail
Route
Pass
Mtn
Pk
L
Res
Jackson
Wisdom
Big Hole Battlefield
Continental Divide
Bitterroot
Beaverhead Co
Lemhi Co
Pioneer
Big Hole
Anderson Mtn
Pyramid Pk
Squaw Mtn
Odell Mtn
Stewart Mtn
Deer Pk
Woody Mtn
Butch Hill
Foolhen Mtn
Alder Pk
Shaw Mtn
Bender Pt
Gibbons Pass
Lost Trail Pass
Chief Joseph Pass
Big Hole Pass
Lily Lake
Sondo Lake
Baldy Lake
Schwinegar L
Stewart Meadows
Steer Lake
Bear L
Lena
Ajax
Dyer Lakes
Ovis L
Holland L
Morgan Jones L
Johanna L
Stone L
Bobcat Lakes
Odell Skull
Alternate Route
Clark Return Route
Nez Perce Trail
Joseph Creek Trail
Principal Montana Meridian
Boise Meridian
Salmon River
North Fk
Big Hole River
Rock Creek
Warm Creek
Bull Creek
Miner Creek
Carmen Creek
Fourth July Cr
Dahlonega Cr
Hell Roaring Cr
Mussigbrod Lake
Ravalli
Beaverhead
Bender
Johnson
Tie
Big Hole River
Big Hole Fork
North Fork
Doolittle Cr
McVey Cr
Squaw Cr
Papoose Cr
Bryant
Hailey
Hole
Buller
Steel Cr
Swamp Creek
Stanley
Lacy
Odell
Vilyman
Schultz Res
Moose
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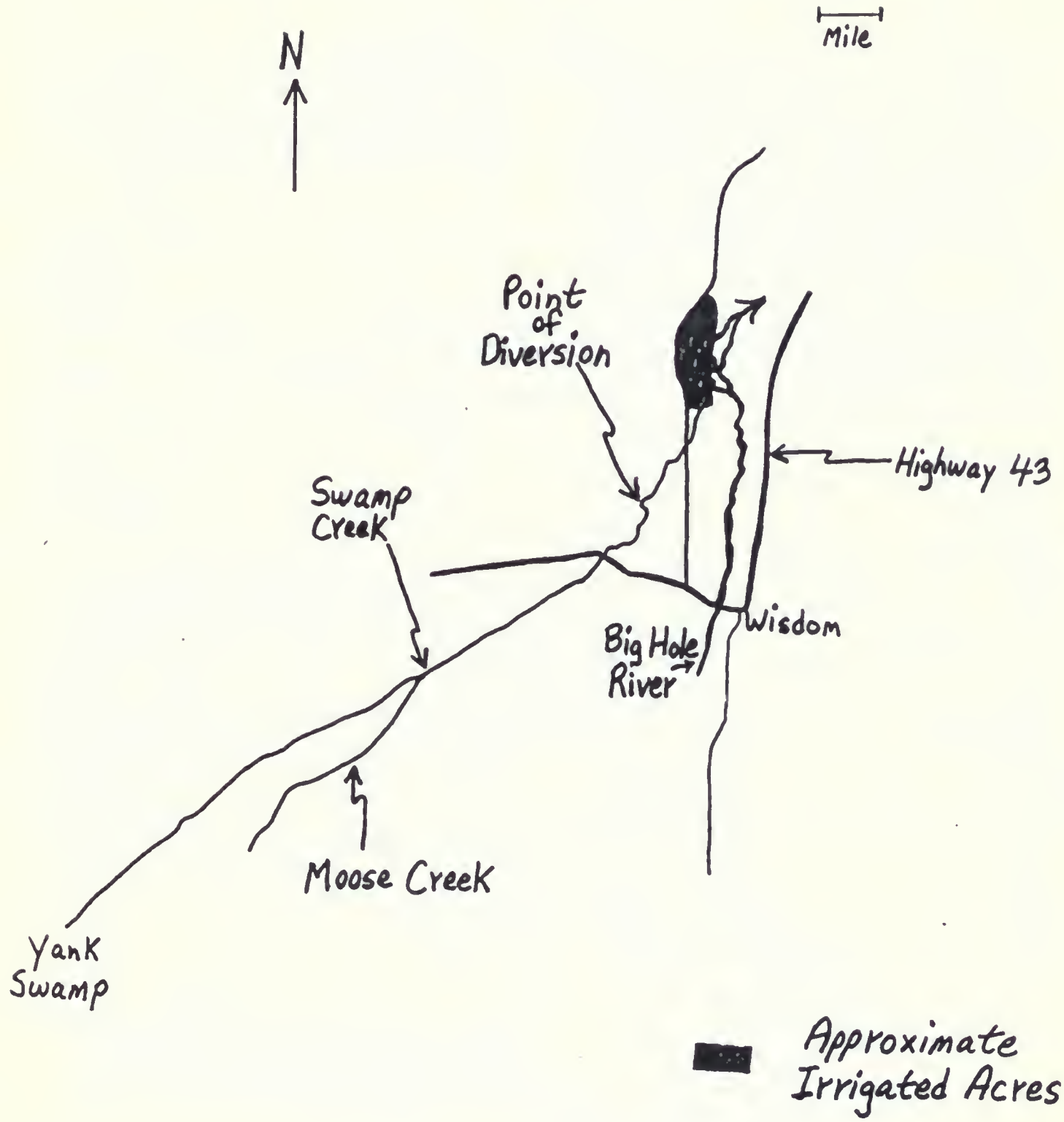
APPENDIX 2


N
Mile
Point of Diversion
Highway 43
Swamp Creek
Wisdom
Big Hole River
Moose Creek
Yank Swamp
Approximate Irrigated Acres

APPENDIX 3

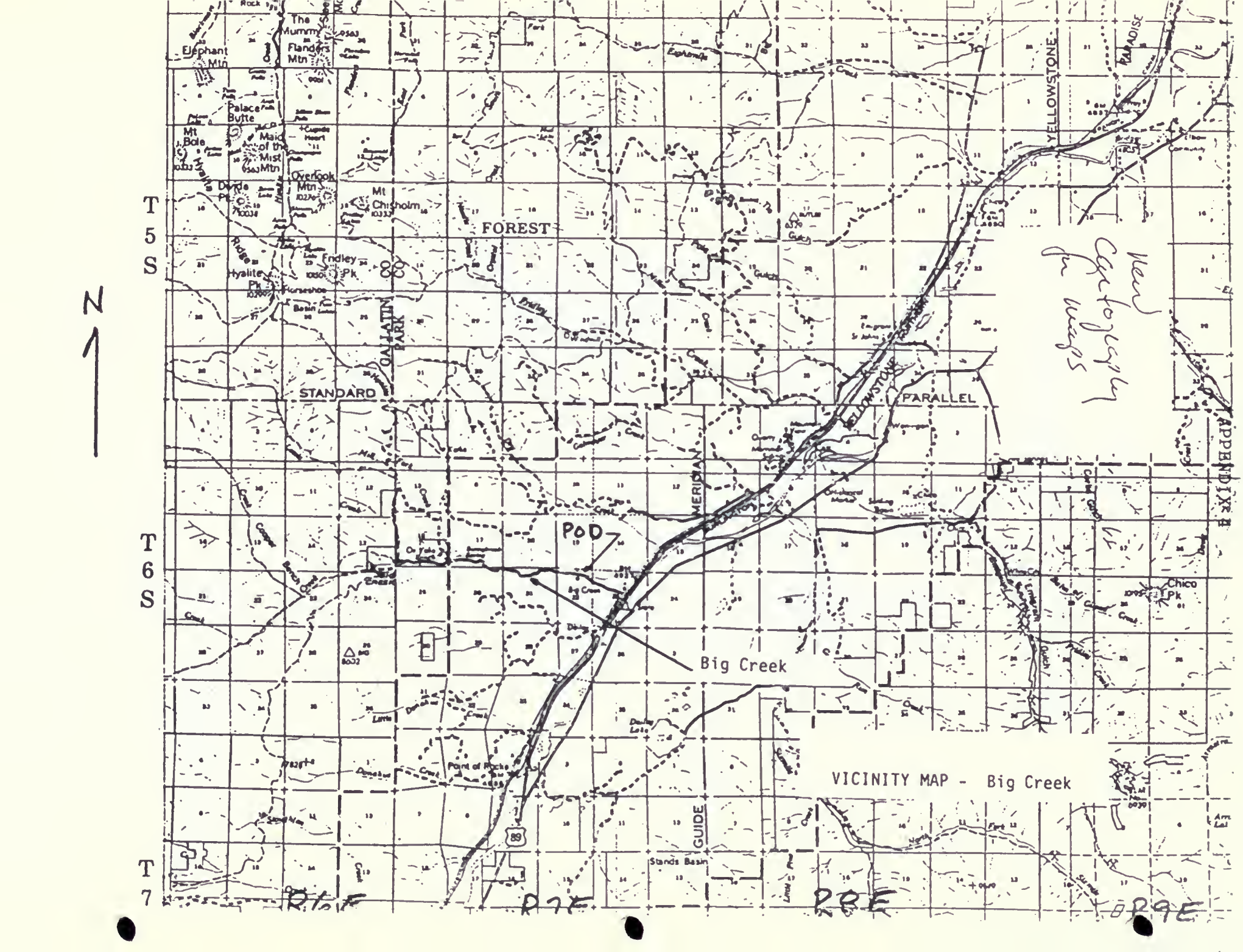
Summary of Flow Measurements
for Swamp Creek

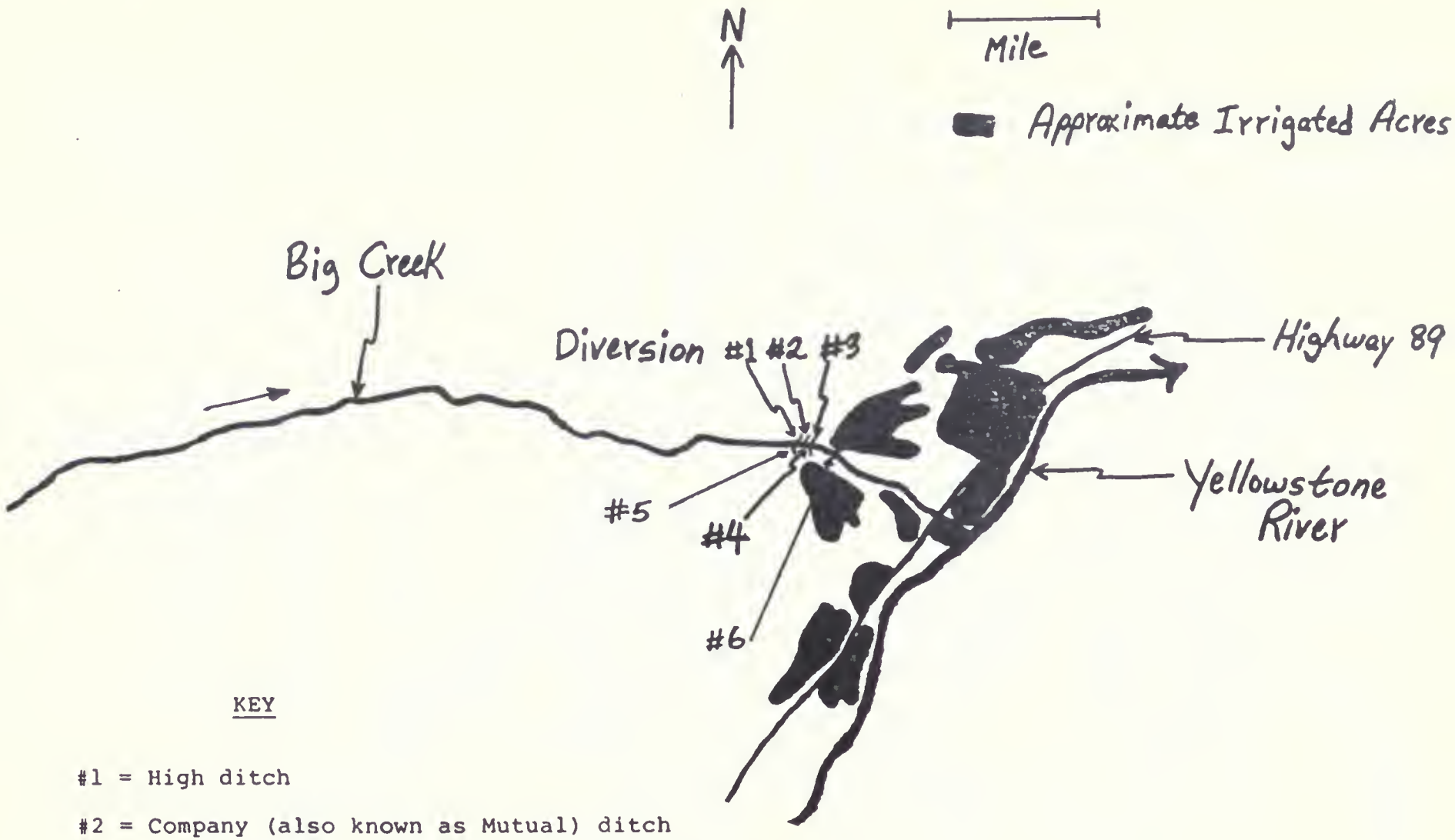
USGS

Date	Flow (cfs)
4-14-87	35.8
5-05-87	15.9
5-19-87	62.7
6-30-87	4.23
8-19-87	1.57
9-29-87	12.3

DFWP

6-20-79	7.6 (Nelson)
8-27-79	74.6 (Nelson)
8-17-88	3.9 (Skaar)
8-26-88	2.5 (Skaar)
8-30-88	2.6 (Skaar)
8-31-88	2.4 (Skaar)
9-08-88	1.1 (Skaar, 3
	2.2 different
	1.7 locations)


N
T 5 S
T 6 S
T 7
R 6 E
R 7 E
R 8 E
R 9 E
FOREST
STANDARD
PARALLEL
MERIDIAN
YELLOWSTONE
GUIDE
POD
Big Creek
Elephant Mtn
The Mummy
Flanders Mtn
Palace Butte
Mt Bole
Maid of the Mist Mtn
Overlook Mtn
Mt Chisholm
Divide Pk
Hyalite Pk
Emdley Pk
Horseshoe Basin
Chico Pk
Point of Rocks
Sands Basin
APPENDIX B
VICINITY MAP - Big Creek



KEY

#1 = High ditch

#2 = Company (also known as Mutual) ditch

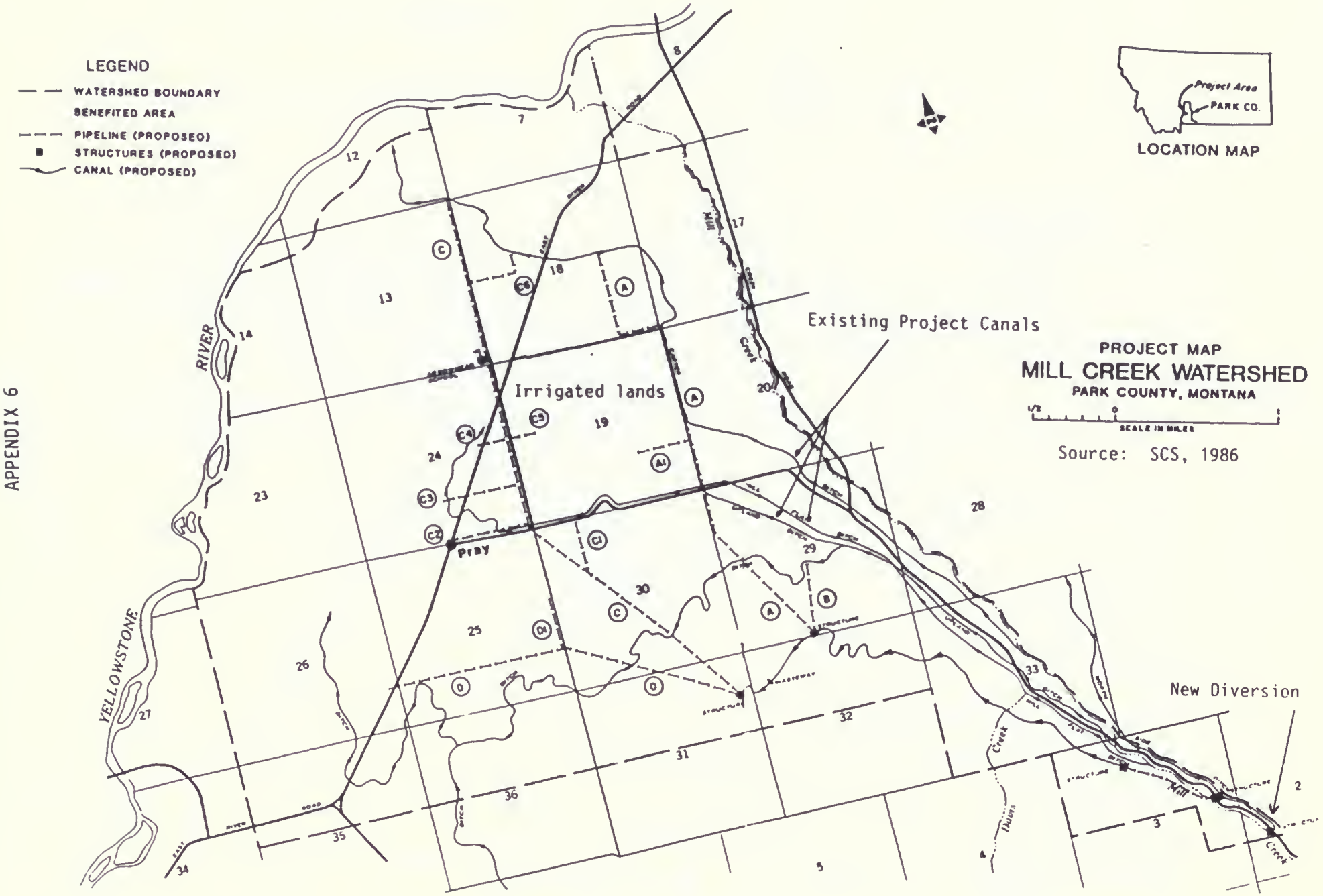
#3 = Brutger/Hubbard (also known as Mitchell) ditch

#4 = Hubbard ditch

#5 = Malcolm/Ragsdale (also known as Stewart/Ragsdale) ditch

#6 = Hubbard (also known as Hookham) ditch (High water only)

APPENDIX 6


LEGEND
WATERSHED BOUNDARY
BENEFITED AREA
PIPELINE (PROPOSED)
STRUCTURES (PROPOSED)
CANAL (PROPOSED)
Project Area
PARK CO.
LOCATION MAP
Existing Project Canals
Irrigated lands
New Diversion
Pray
RIVER
YELLOWSTONE
Creek
Mill
PROJECT MAP
MILL CREEK WATERSHED
PARK COUNTY, MONTANA
SCALE IN MILES
Source: SCS, 1986

APPENDIX 7

June 14, 1989

STREAM CRITERIA FOR WATER LEASING

The Montana Department of Fish, Wildlife and Parks established a number of criteria to help identify priority streams where water leasing will be initially studied under provisions of HB 707. Criteria were developed for two general categories of streams: (1) simple streams where the potential success of a leasing program is high and can be accomplished in a relatively short time period and (2) complex streams where analysis and implementation of a leasing program will take considerably longer. Category 1 and 2 streams are described by the following criteria.

Category 1 Streams

1. Streams having the potential to sustain relatively high populations of resident salmonids, streams that support fish species of "special concern" (i.e. arctic grayling, westslope cutthroat trout and Yellowstone cutthroat trout) during all or some stages of their life cycles, and streams that currently or could potentially provide important spawning, rearing and/or wintering habitats for migratory salmonids.

2. Streams with a history of dewatering problems.

3. Streams where the augmentation of instream flows with a relatively small amount and volume of leased water will provide measurable and worthwhile benefits to the fishery.

4. Streams where the present data base is sufficient to document the state of the existing fishery and to provide a measure of potential fishery benefits should instream flow augmentation occur.

5. Streams where there are relatively few existing consumptive water users.

6. Streams where sufficient flow information is available to assess water availability during high flow, normal and drought years, and to define periods when instream augmentation is normally needed.

7. Streams where the potential lessors hold early priority dates and have diversions that are strategically located to provide the most benefits to the fishery.

8. Streams in which water rights have been adjudicated in the past, thus providing a legal basis for the amount, priority date and point of diversion of each right.

9. Sufficient angler interest and support.

Category 2 Streams

Guidelines 1, 2, 4, 6, 7, 8 and 9 are identical to Category One.

3. Streams where instream flows must be augmented by a large amount and volume of water, representing many lease agreements, to provide measurable and worthwhile benefits to the fishery.

5. Streams where there are many existing consumptive water users.

Realistically, no Category 1 or 2 stream selected for study is likely to satisfy all of the above criteria. These guidelines are meant to be used in developing a focus for the Department's initial pilot program and each situation will be individually analyzed.

wtrcons.lp

INSTREAM FLOW LEASING PILOT PROGRAM

STREAM SELECTION CRITERIA OF THE BOARD OF NATURAL RESOURCES AND CONSERVATION

ADOPTED SEPTEMBER 12, 1989

BACKGROUND INFORMATION

1. The location and length of each stream reach in which leasing would likely occur is specified.

2. The approximate volume of water that likely would be leased is specified.

3. A Ggeneral description of water use in ~~the~~ each of the proposed stream reaches is provided.

STREAM SELECTION CRITERIA

1. The stream supports, has the potential to support, or contributes to the support of a high-value fisheriesy.

2. The stream is subject to regular or periodic low flows that significantly reduce the productive potential of the fishery or fishery it helps to support.

3. The leasing of water is necessary to maintain or enhance stream flows for fisheries (i.e. alternative means of providing instream flows are not readily available in the near-term).

APPENDIX 9

BEFORE THE BOARD OF NATURAL RESOURCES
AND CONSERVATION OF THE STATE OF MONTANA

In the matter of the designation of Swamp Creek pursuant to Mont. Code Ann. Section 82-2-437 (1989)	ORDER DESIGNATING SWAMP CREEK ELIGIBLE FOR WATER LEASING

FINDINGS OF FACT

1. Pursuant to Mont. Code Ann. § 85-2-437 (1989), the Department of Fish, Wildlife and Parks, with the consent of the Montana Fish and Game Commission, applied to the Board of Natural Resources and Conservation for designation of Swamp Creek (located on the eastern slope of the Bitterroot Mountains and flowing into the Big Hole River north of Wisdom, Montana) as a stream for which water rights may be leased to maintain or enhance streamflows for the arctic grayling fishery.

2. The Board pursuant to notice duly given held a public hearing on the proposed designation on March 5, 1990. Data, views, or arguments on the question of whether water leasing is necessary to maintain or enhance streamflows for fisheries in the stream was presented.

3. The length of the stream reach in which leasing would likely occur is approximately 2 and 1/2 miles, extending from the point of diversion identified in the application of the Department of Fish, Wildlife and Parks to the mouth of the creek.

4. The approximate volume of water that likely would be leased is 3 cubic feet per second.

5. The water in the stream reach (that may be leased) is currently used to irrigate about 800 acres of hay land located near the mouth of Swamp Creek.

6. The stream supports a high-value arctic grayling fishery.

7. The stream is subject to regular or periodic low flows that significantly reduce the productive potential of the arctic grayling fishery it helps support.

8. The leasing of water is necessary to maintain or enhance streamflows for the arctic grayling fishery in the lower portion of Swamp Creek.

CONCLUSION

Pursuant to Mont. Code Ann. § 85-2-437 (1989), Swamp Creek is eligible for leasing because it is necessary to maintain or enhance stream flows for the arctic grayling fishery.

ORDER

IT IS HEREBY ORDERED that Swamp Creek is designated as a stream reach eligible for water leasing as provided in Mont. Code Ann. § 85-2-436 (1989).

DATED this 5th day of March, 1990.

BOARD OF NATURAL RESOURCES
AND CONSERVATION

By William A. Shields
William A. Shields

BEFORE THE BOARD OF NATURAL RESOURCES
AND CONSERVATION OF THE STATE OF MONTANA

In the matter of the designation of Big Creek pursuant to Mont. Code Ann. Section 82-2-437 (1989)	)))))	ORDER DESIGNATING BIG CREEK ELIGIBLE FOR WATER LEASING

FINDINGS OF FACT

1. Pursuant to Mont. Code Ann. § 85-2-437 (1989), the Department of Fish, Wildlife and Parks, with the consent of the Montana Fish and Game Commission, applied to the Board of Natural Resources and Conservation for designation of Big Creek (located on the east sloe of the Gallatin Range and flowing into the Yellowstone River) as a stream for which water rights may be leased to maintain or enhance streamflows for the Yellowstone cutthroat trout fishery.

2. The Board pursuant to notice duly given held a public hearing on the proposed designation on March 5, 1990. Data, views, or arguments on the question of whether water leasing is necessary to maintain or enhance streamflows for fisheries in the stream was presented.

3. The length of the stream reach in which leasing would likely occur is approximately one mile, extending from the series of six irrigation diversions to the mouth of the creek.

4. The approximate volume of water that likely would be leased is between 10 to 15 cubic feet per second from nine water users, depending on the amount of water salvaged by improving efficiency of irrigation system.

5. The water use in the stream reach is currently used for irrigation of about 1,200 of alfalfa, wild hay, and small grains.

6. The stream supports a high-value Yellowstone cutthroat trout fishery.

7. The stream is subject to regular or periodic low flows that significantly reduce the productive potential of the Yellowstone cutthroat trout fishery it helps support.

8. The leasing of water is necessary to maintain or enhance streamflows for the Yellowstone cutthroat trout fishery in Big Creek.

CONCLUSION

Pursuant to Mont. Code Ann. § 85-2-437 (1989), Big Creek is eligible for leasing because it is necessary to maintain or enhance stream flows for the Yellowstone cutthroat trout fishery.

ORDER

IT IS HEREBY ORDERED that Big Creek is designated as a stream reach eligible for water leasing as provided in Mont. Code Ann. § 85-2-436 (1989).

DATED this 5th day of March, 1990.

BOARD OF NATURAL RESOURCES
AND CONSERVATION

By William A. Shields
William A. Shields, Chairman

Montana Department of Fish, Wildlife & Parks

1420 East Sixth Avenue
Helena, MT 59620
August 21, 1990

William Shields, Chairman
Board of Natural Resources and Conservation
1520 East 6th Avenue
Helena, MT 59620

Dear Chairman Shields:

The Department of Fish, Wildlife and Parks and the Department of Natural Resources and Conservation have coordinated the assembly of the enclosed draft report to the Water Policy Committee on the status of the water leasing study and pilot program. The Department of Fish, Wildlife and Parks concurs with the contents of this draft report with the exception of Section V - Evaluation and Recommendations. We are most concerned with Subsection 1.A. This section is a requirement for the final report to address the social, economic and environmental impacts of water leasing on:

(1) the lessors (i.e., farmers/ranchers leasing water);

(2) other water users, including their costs of participating in the change of use process;

(3) the local tax base and economy;

(4) return flows;

(5) the fishery resource;

(6) other

The Department of Fish, Wildlife and Parks does not believe items (1), (2) and (3) should be a requirement of the final report. The remainder of this letter will explain our rationale for this position.

First, these requirements would require the Department of Fish, Wildlife and Parks to conduct new studies in addition to those already required in the leasing process. The current studies already add up to considerable expense by the Department. Second, the items are not required by law and to require such studies will

only further complicate the water leasing process. Third, we are concerned that a precedent will be set for future water leasing study requirements. A water lease applicant already has considerably more requirements to meet than does an applicant for a change of use permit.

Specifically:

(1) Leasing is a voluntary program. Thus, we believe it is up to the individual to make the decision as to how water leasing would affect his farm/ranch operation. The potential lessor is not required to participate in the leasing process and it would be only good business for him to determine the positive and negative effects of leasing water before he entered into a lease agreement.

(2) The effects on other water users will be determined during the administrative hearing. The water leasing studies on Swamp and Big creeks being conducted by the DFWP should provide data to show the effects of leasing on existing users, such as return flow effects. This information would be used in the hearing process to determine any effects on existing users. HB 707 specifically states that a lease will not be approved if it will adversely affect other water users and their objections cannot be resolved.

The cost to objectors of participating in the change of use process for water leasing should be little different than the cost to them of participating as an objector to any other permit application which would affect them. In fact, the cost may be less because of the large burden placed on DFWP to develop information under this law. We feel the water leasing process places no more of a burden on existing water users than would a new water use permit or change of use application.

(3) A determination of the positive or negative effects on the local tax base and economy would require someone to make a study of such effects. The current leasing studies are already expensive. Additional studies would increase the cost to the department. The Department of Natural Resources and Conservation has suggested this item be included in the water leasing study report. Our experience with the water reservation process is that, over time, DNRC has continued to increase the requirements, cost and, thereby, the time needed to file an application.

The water leasing process is already being criticized as being too complex and slow. We ask the Board to carefully consider any new requirements that would add to that problem.

We have no objections to items (4) and (5) being in the report. Item (4) will be addressed during the current studies. However, we have addressed item (5) in this draft report as well as in our February 22, 1990 report to the Board which it used to approve water leasing on Swamp and Big creeks. The final report will not likely contain much, if any, further information. A water lease

will have to be implemented and studied for some time to determine its effects on the fishery resource.

We appreciate the opportunity to explain our position on this matter and would be happy to answer any questions the Board may have at its August meeting.

Sincerely,

Liter E. Spence

Liter E. Spence
Water Resources Supervisor
Fisheries Division

dr

cc: Board Members
Gary Fritz
Pat Graham

DEPARTMENT OF NATURAL RESOURCES
AND CONSERVATION

STAN STEPHENS, GOVERNOR

LEE METCALF BUILDING
1520 EAST SIXTH AVENUE

STATE OF MONTANA

DIRECTOR'S OFFICE (406) 444-6699
TELEFAX NUMBER (406) 444-6721

HELENA, MONTANA 59620-2301

MEMORANDUM

TO: Chair, Fish and Game Commission
Chair, Water Policy Committee

FROM: William A. Shields
Chair, Board of Natural Resources and Conservation

SUBJECT: Water Leasing Study Report

DATE: August 31, 1990

The Board of Natural Resources and Conservation discussed, amended, and tentatively approved (pending action by the Fish and Game Commission) the "draft" water leasing study report on August 30, 1990. The Board made two specific amendments to the report:

1. It deleted Section V(1)(A)(1-3).

2. It deleted Section V(1)(B).

In addition to these amendments, the Board would like to offer some additional observations, comments, and direction.

First, the Board deleted Section V(1)(A)(1-3) in order to hopefully speed-up the water leasing program. While these items were deleted, the Board expects the Department of Fish, Wildlife and Parks to provide information to the Board on the social and economic impacts of water leasing after leases have been exercised. To help evaluate these social and economic impacts, the Board recommends that the Department of Natural Resources and Conservation and the Department of Fish, Wildlife and Parks should hold public meetings in the appropriate communities after any and all leases have been exercised. The public meetings should provide an opportunity for water right holders and others to comment on the impacts of the exercised leases.

Second, the Board is extremely concerned with the lack of substantive progress on acquiring and exercising a lease. The Board realizes that the Department of Fish, Wildlife and Parks must conduct some studies on the potential adverse hydrologic impacts to other water users from water leasing prior to entering

the change of use process. However, the Board is concerned that such studies have slowed the process of acquiring a water lease. Therefore, the Board strongly recommends that the Department of Fish, Wildlife and Parks immediately initiate the change of use process on the two streams that have been approved for the water leasing study. The Board also expects the Department of Fish, Wildlife and Parks to provide the Board with information on the adverse hydrologic impacts, if any, after the leases have been exercised.

Third, the Board is quite concerned with the limited number of streams that are currently being pursued in the water leasing study. The Board has consistently asked the Department of Fish, Wildlife and Parks to identify and study additional streams under the water leasing program. The Board strongly encourages the Department of Fish, Wildlife and Parks to identify and seek approval on at least one additional stream reach by the Board's next meeting.

Fourth, the Board encourages the conservation and recreation community to get more involved in the water leasing study by helping the Department of Fish, Wildlife and Parks identify additional streams where water leasing may be viable. In addition, the conservation and recreation community should encourage the Department of Fish, Wildlife and Parks to pursue as many leases as possible to provide additional case studies for evaluation.

Fifth, the Board has actively supported leasing since the state water planning process in 1988 and the 1989 legislative session. The Board believes that the leasing study, particularly the question of potential adverse impacts to other water users, is a critical prerequisite to the consideration of other mechanisms for transferring offstream water rights to instream uses. Since other, more permanent transfers of water to instream flow uses will raise questions similar to those being evaluated in the water leasing study, the results of the leasing study will establish a very important precedent for considering these other mechanisms.

Finally, the Board would like to review the water leasing study report after the Fish and Game Commission considers it on September 14 <u>if</u> the Commission makes any significant changes. If necessary, the Board is willing to appoint a subcommittee to work with a subcommittee of the Commission to resolve any differences.

cc: Glenn Marx, Office of the Governor